Prototype of an Interactive Computer Based Dental Record

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The importance of Quality Assurance in health care is widely recognized. Traditional methods for assessing the quality of patient care have relied mainly upon retrospective analyses. New initiatives are growing in the area of Proactive Quality Assurance, which emphasize assessment and improvement of patient care at the time of treatment, thus building internal quality assurance into the care-giving process. The patient record has long been recognized as the essential tool in assessing the quality of care provided to patients. As a proposed solution to problems associated with existing record systems, the computer based patient record has emerged as a viable alternative to the current paper record. It holds promise for standardizing and improving patient record keeping, and for playing a key role in improving the quality of patient care. The Institute of Medicine's (IOM) recently released Study to Improve Patient Records advocates the prompt development and implementation of computer based patient records as the standard for all patient care records.

This project represents the efforts of our collaboration with Uppsala Sweden on a computerized dental operatory workstation. The design components of this system include artificial intelligence based diagnostic decision support and voice activated color-graphic tooth charting. This computer based dental record is designed to be integrated into the operatory environment in an ergonomic fashion in order to facilitate the unobtrusive and efficient acquisition of patient information. This prototype demonstrates the ability of an interactive computer based patient dental record to increase the efficacy and quality of patient record information, and to provide improved cost- effective patient care. In addition, to supporting clinical decision making, and patient education, it provides a standardized database for outcomes assessment and research upon which to establish valid criteria for standards of care. Those essential elements of the patient record which indicate the quality of care provided are incorporated into this electronic patient record system. Built-in reminders and decision support components of this computer based patient record are being developed and evaluated for their ability to facilitate patient care and management.

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